

**ABSTRACT OF THE DISCLOSURE**

The invention represents the disclosure of a novel insect intestinal mucin. The IIM protein was been identified and cloned using *T. ni* larva. The cDNA and amino acid sequences have been determined and are disclosed. The novel protein has an approximate molecular mass of 400 kDa. These sequences are useful for the production of transgenic or recombinant vectors including viral, microorganism, cell, plant, or animals, wherein the virus, microorganism, cell, plant, or animal is the product of an insertion of a gene expression vector including a DNA that encodes an IIM protein sequence. Thereafter the engineered host of the IIM DNA sequence is capable of expressing said IIM protein in a functional form. Also useful is a purified and isolated recombinant DNA sequence comprising a DNA sequence that codes for an IIM protein. The recombinant DNA sequence used can be a cDNA sequence for either IIM14 or IIM22, SEQ. ID.'s No. 1; and 2 respectively. The current invention also provides for the use of the purified amino acid sequences of IIM14 or IIM22, SEQ. ID.'s 3 or 4 respectively. With this knowledge of the proteinaceous components of the PM, and particularly the mucin-like proteins it will be possible to enhance the effectiveness of bio-engineered pesticides, recombinant viral vectors, enhance the defenses of transgenic plants, or protect insect vectors susceptible to attack by organisms utilizing enhancin or enhancin-like enzymes.